



Regional Transportation Authority – *RTA Next*: The Economic Benefits to Pima County



Prepared for:



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December 2023



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Executive Summary

Rounds Consulting Group, Inc. (“RCG”) was retained by the Pima (County) Association of Governments (“PAG”) to provide economic development benefit calculations related to the Regional Transportation Authority (“RTA”) plan and the extension of the RTA half-cent sales tax.

The RTA’s current 20-year plan, which was voter-approved in 2006, includes funding for roadways, transit, safety projects, environmental considerations, and economic vitality improvement projects and services. The funding for the plan’s various components comes from the half-cent tax and will be available through June 2026.

The accompanying analysis of the previous transportation plan and the proposed extension of the related sales tax includes several economic modeling scenarios. The scenarios were prepared to compare and contrast the extent to which the current transportation plan and corresponding tax increased local economic activity to a level where the investment provided enough economic activity to essentially be a self-funding mechanism.

In simple terms, this means the review attempted to identify whether or not the previous plan produced a positive return on investment (“ROI”) for taxpayers, and if the findings from the previous program review can be extended into the future under the proposed tax extension.

Key Findings – Looking Back and Forward

A region’s investment in transportation infrastructure is one of the most important economic development considerations when businesses want to expand or relocate into an area. This is also true for individuals who are contemplating where to reside and raise a family.

The following analyses provide context on the current RTA plan and the extent to which employment and population growth will be enhanced by a new RTA plan known as **RTA Next** to address priority regional transportation needs over the next 20 years. A successful **RTA Next** plan development process ultimately is dependent on voter approval. The key findings related to the current RTA and the proposed program extension are listed below:

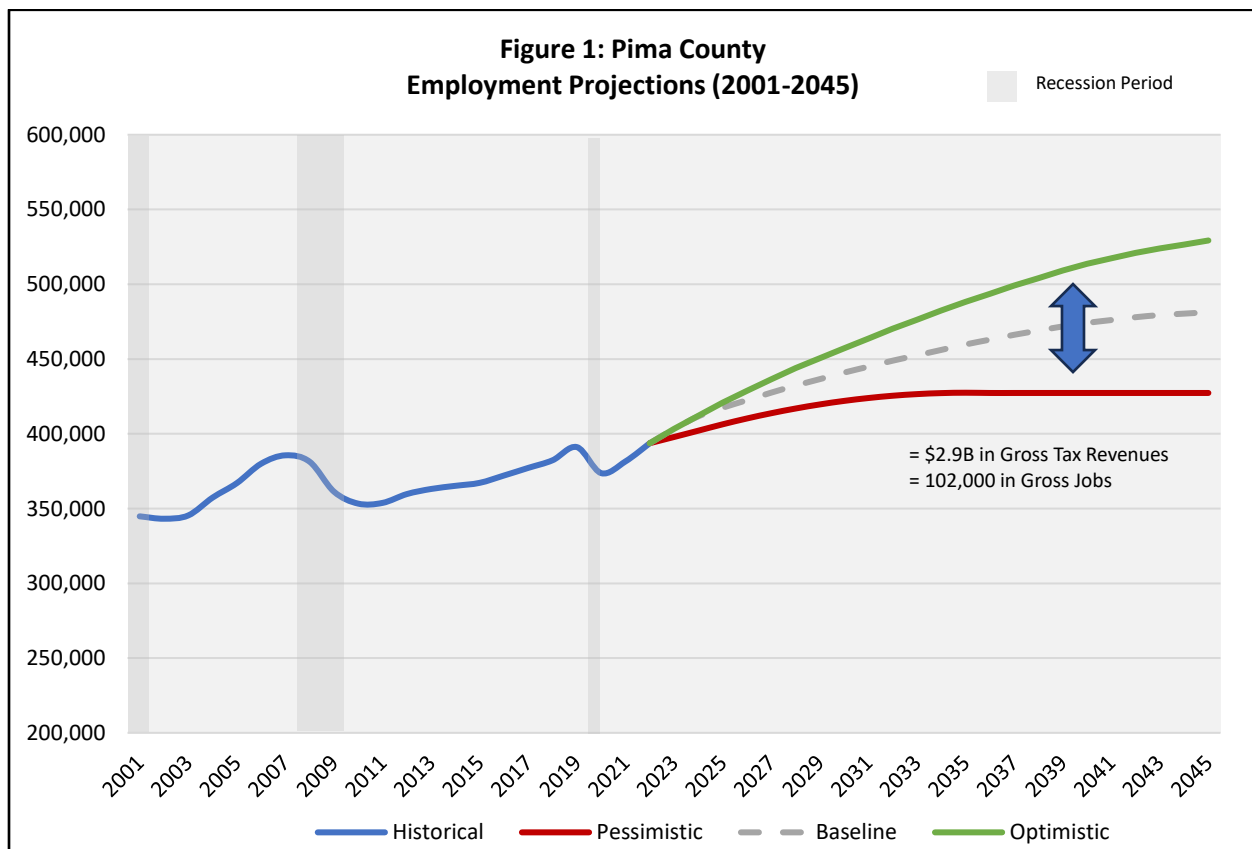
- ***Pima County voters approved the \$2.1B RTA plan, funded through a half-cent sales tax, in 2006.*** The RTA funding has been used to widen and improve roadways as well as build new roadways, highway interchanges, intersections and upgraded signal technology; and build pedestrian crossings, bike lanes, bus pullouts, and drainage infrastructure. The current plan and sales tax will expire in 2026.
- ***The focus of the RTA funded projects have been to address the regional transportation needs, including transit, safety, economic, and environmental needs, through extensive public input.***



- **Looking back, it is estimated that the current RTA half-cent sales tax not only supported temporary construction jobs, but also helped create 40,000 new permanent jobs throughout Pima County.** In other words, if the existing tax were not previously approved, the region would have produced 40,000 fewer jobs over the previous two decades.
- **The 40,000 jobs that would not have been realized without the previous voter-approved sales tax for transportation investment is a conservative figure.** This is because other regions throughout the state have been aggressive in their economic development efforts, including investing in transportation infrastructure over the previous two decades, and Pima County's economy would have been weakened further due to the loss of tax revenues that have been invested in other job creation endeavors.
- While difficult to estimate these additional losses with certainty, the 40,000 lost jobs estimate is likely understated by at least 50%. **It is possible that the region would currently have approximately 60,000 fewer jobs if roadway investment was severely limited over the past two decades.**
- Between 2025 and 2045, Pima County is projected to gain approximately 87,600 new jobs based on current conditions and trends. This can be considered the “baseline” projection in jobs.
- However, over time, **inadequate investments in transportation infrastructure can contribute to economic stagnation or decay** as businesses and individuals may choose to relocate to areas with more efficient and better transportation options.
- **A reduction in regional transportation infrastructure investment could reduce the projected baseline job gains (i.e., 87,600) by an estimated 54,000 jobs.** This means the economic damage from a deteriorating transportation infrastructure system is equal to 54,000 lost jobs by 2045 **and a loss of \$3.5B in cumulative tax revenues (i.e., state, county, and city/town taxes).**
- **Conversely, the new RTA Next plan will allow for additional investments in transportation infrastructure and can be enhanced by matching transportation infrastructure investment with regional economic development planning** as well as utilizing various “value capture” techniques. This could yield an increase in economic activity over the same 20-year timeframe equal to an estimated 48,000 additional jobs above the baseline projection.
- **The net-new job tally in 2045, under this more optimistic scenario, equals a net increase of 102,000 jobs when compared to a scenario of reduced investment (see Figure 1).** The additional state and local tax revenue that would be generated under the optimistic scenario reaches \$6.5B on a cumulative basis.
- When evaluating economic benefits related to major infrastructure investment such as roadway construction, the benefits will extend beyond a 20-year funding timeline. This is because current investment provides benefits that extend beyond the current year.



- The investments typically continue to provide benefits over a 35-year timeframe, which factors in the duration between new construction spending and monies only spent on maintenance.
- Utilizing the appropriate 35-year economic benefit timeline, \$11.9B in gross state and local benefits (i.e., \$5.7B in state, \$3.7B in county, and \$2.4B in city/town taxes) will be derived. For comparison, the total cost to the taxpayer of the RTA NEXT plan is estimated to sum to \$2.3B.
- **The ROI of the transportation infrastructure proposal for just the County is, therefore, 1.6:1. This means the economic gains from the local taxpayer investment will exceed the cost by 60%, yielding a net benefit to the region’s taxpayers.**
- The “breakeven” goal is for the ROI calculation to at least reach 1:1 in less than 35 years. The analysis identifies that the breakeven point occurs in just 26 years, a very favorable value.
- **Note: The revenue gains or losses exclude the revenue from the tax itself. If the tax is extended, it is assumed it will be invested in transportation infrastructure.**



Source: Rounds Consulting Group, Inc.



Additional Community Benefits

While the review of several community benefits was beyond the scope of this analysis, some items are worth noting, nonetheless. These include:

- ***A stronger economy produces more tax revenue which can then be returned to taxpayers and/or reinvested in economic development initiatives.*** This helps create an upward economic spiral that can be advanced or slowed depending on local public policy decisions.
- ***When economic development factors are considered in the transportation infrastructure queuing and timing of projects, additional economic development occurs that pushes tax revenue higher than otherwise would otherwise be realized.***
- This ***“compound economic development”*** can add to the revenue base of local communities and be used on public safety, housing affordability and homelessness projects, as well as other economic development projects.
- ***Many other community benefits can be realized with the use of the extra revenue that high ROI projects produce. This takes away a portion of the burden on other local taxation and makes a region more competitive.***





Approach to the Analysis

Several considerations should be analyzed when evaluating the economic benefits associated with large scale public investment projects. These include a review of the extent to which the benefits derived from the public infrastructure investment will exceed the public cost, what happens if the infrastructure investment is not made, and what results from the public investment being properly queued and blended with other regional economic development factors.

In the case of the RTA's transportation tax extension, three analytical scenarios were considered and are defined as:

- A scenario where the **current tax continues**, and investment decisions are consistent with recent history. (*i.e.*, "**Baseline Scenario**")
- The **current tax is not extended**, and the employment and population growth estimates are based on economic decay. (*i.e.*, "**Pessimistic Scenario**")
- **The current tax is extended** and transportation infrastructure investment in Pima County is more aggressively **blended with other economic development efforts**. (*i.e.*, "**Optimistic Scenario**")

The various growth scenarios were processed through a unique impact model designed specifically for transportation investment calculations based on Pima County-specific data. For context into the approach, an economic impact model provides a quantifiable method to estimate the economic activity of a particular activity in an area.

In this case, the task is to identify the extent to which the new transportation infrastructure will generate additional business development and resident wealth.

Economic Impact Methodology

Economic impact models can be used to measure existing activity and potential expansions/contractions of an area's economy resulting from changes in economic activity. Typically, the level of economic effects resulting from the activity is estimated in terms of output, earnings and employment. These are defined as:

- **Output** captures the broader level of economic activity, or the total value of goods and services produced in the region. This is similar to how statistics like gross domestic product ("GDP") capture economic volume in individual states and across the country.
- **Labor income**, a component of output, represent income to employees. The earnings component measures the total change in employee-earned wages throughout the economy due to economic or business activity.
- **Employment** is the total number of full-time (or equivalent) jobs created in the economy on an annualized basis.



The economic effects of the initial activity create additional activity in the regional economy. This relationship is known as the “multiplier” or “ripple” effect. The basis for multiplier effects is the interdependencies between industries, how one industry impacts other sectors, and the cycle of spending and re-spending within the regional economy.

- **Direct effects, or impacts**, measure business activity at an individual site or the initial economic change attributed to the development under consideration.
- **Indirect impacts** capture additional output, earnings, and employment changes generated by increased demand in the industries that supply services or products to the direct business or development under consideration.
- **Induced impacts** capture additional output, earnings, and employment changes generated by increased spending in the local economy by the households of both the direct and indirect employees. These induced companies respond by hiring, increasing payroll hours, and increasing wages. For example, the additional wages received by the direct employees and the indirect supplier employees induce spending at grocery stores, gas stations, clothing stores, etc.

A common input-output model used to generate economic multipliers is IMPLAN (short for “impact analysis for planning”). Originally developed by the U.S. Forest Service in the 1970s, the responsibility for developing IMPLAN data sets shifted to the University of Minnesota as demand grew for regional models. Now, IMPLAN runs as a private organization and is the leading provider of nationwide economic impact data and analytical software.

The RCG custom economic impact model employs this input-output model methodology and uses Arizona-specific IMPLAN multipliers. However, the model is further customized to capture dynamic economic impacts that typical input-output models do not capture.

Fiscal Impact Methodology

Fiscal impact models estimate government revenues generated by a particular project, policy, business, development, or activity in a given area. Typically, fiscal impacts examine revenues from a project or activity and are determined by the study area’s tax structure.

In general, the types of government taxes analyzed include sales taxes, excise taxes, lease taxes, income taxes, and property taxes. A few types of activities subjected to these taxes include payroll, retail sales, utility use, and leases.

Fiscal impacts are categorized similarly to economic impacts and are broken down at the direct, indirect, and induced levels from which they are created.

In general, direct revenues can be estimated by definable sources such as the sales taxes generated through the purchase of taxable goods and services. Indirect and induced revenues are generated by the wages, residency, and spending of those indirect and induced jobs that are supported by direct activity.



The RCG fiscal impact model employs this methodology. The model was designed to produce revenue information under the local governments' tax structures. The tax revenue impacts include the revenues collected by the state, Pima County, and local cities and town within Pima County.

Forecast Model Methodology

A comprehensive econometric forecasting model was developed to project the potential economic impacts of the RTA Next plan over the next 35 years (i.e., 2025-2060). The model combines moving average and exponential smoothing forecasting techniques, utilizing both quantitative and qualitative information.

Quantitative forecasting methods rely heavily on the available data and historical trends. Various federal and state government and private sector data was collected and analyzed as part of the quantitative research. Qualitative forecasting is based on expert judgements or speculations on the trends of the factors that affect the projections.

Both moving average and exponential smoothing forecast techniques rely on the assumption that patterns seen in historical data will continue in the future but are adjusted based on expert knowledge. The patterns are generally characterized as: 1) part of a trend, 2) seasonal, 3) cyclical, 4) an inflection point, or 5) a random component.

Each of these patterns, combined with current trajectories, unique economic conditions, or other interventions, can impact future employment growth; and different forecast techniques account for these variances with differing degrees of accuracy. Identifying which patterns impact employment statistics is critical in providing a thorough forecast.

Three forecast scenarios (i.e., a low, baseline, and high) were developed to account for uncertainty, measure the sensitivity of the projections, and capture different possible combinations of the factors. This provides a range of potential outcomes and their associated probabilities.

The three forecast scenarios are defined as:

- **Pessimistic Forecast:** The pessimistic forecast represents a scenario where RTA funding ends in 2026 and economic growth is limited due to congestion, delays, and a deteriorating infrastructure network. Over time, inadequate investments in transportation infrastructure can contribute to economic stagnation as businesses and individuals may choose to relocate to areas with better and more efficient transportation options.
- **Baseline Forecast:** The baseline forecast represents a scenario where RTA funding is extended over the next 20 years. It assumes that conditions will unfold as anticipated without significant deviations or major disruptions from historical trends. The baseline forecast serves as the reference point for other scenarios and is often considered the most probable outcome.



- **Optimistic Forecast:** The optimistic forecast represents a scenario where RTA funding is extended over the next 20 years and projects are properly queued and blended with other economic development efforts in Pima County. The optimistic forecast reflects the best-case situation among the possible outcomes.

The following is a brief description of the econometric modeling techniques used to analyze patterns and produce employment forecasts.

Moving Average Technique

A moving average technique is a very common and reliable method of forecasting. It is often used as a baseline on which to compare other forecasting techniques. The moving average technique smooths any outliers in the data to isolate a reliable trend by averaging observed data points in the period considered under consideration.

For example, a 3-year moving average for a dataset would consist of the average of years one, two and three. The next point in the trend would be the average of the values in years two, three and four. This process continues until the trend is established.

This historical trend is then assumed to continue, following a similar pattern. The forecast is then made based on the trend. Additionally, the accuracy of the forecast can be enhanced by assigning weights to the various data points observed.

For example, if the trend suggests a smooth and continued growth pattern, then a greater weight can be assigned to the most recent observations. The moving average can be defined by the following equation. Where x_t is defined as the employment estimate being forecasted, w_i is the set of weights assigned, f is the number of future periods, and p is the number of past periods.

$$M_{x,t} = \frac{\sum_{i=-p}^f w_i x_{t+i}}{\sum_{i=-p}^f w_i}$$

Exponential Smoothing Technique

Exponential smoothing is a popular method of leveling a data series when there is not an easily identified trend but has a mean that changes over time. This technique is similar to the moving average technique in the sense that varying weights are given to different observations in the time series. In this case, however, the weight applied to past observations declines automatically. An exponential smoothing model can be defined by the following equation.

$$S_1 = (1 - \alpha)^t S_0 + \alpha \sum_{k=0}^{k=t-1} (1 - \alpha)^k + x_{t-k}$$

In this case, α is the smoothing parameter that has a value between 0 and 1. This can be thought of as a weight or probability that removes the uncertainty or “noise” from the estimate x_t . The value for α is chosen by the forecaster after consideration of various factors such as national, regional, or local economic conditions, world events, etc.



Analytical Qualifiers

This analysis is subject to certain limitations arising from data availability and the speculative nature of projections. These limitations should be taken into consideration when interpreting and generalizing the findings of this analysis.

The data and assumptions used in this report are subject to marginal uncertainty and variation. Therefore, actual impacts may vary, and some impacts may not materialize due to unanticipated events and changing circumstances. However, RCG has made extensive efforts to confirm the accuracy of the information contained in this analysis.





The Current Half-Cent Sales Tax

The RTA is the fiscal manager of a 20-year regional transportation plan. Pima County voters approved the \$2.1B plan, funded through a half-cent sales tax, in 2006. The RTA plan set out to reduce the County's growing congestion, improve safety and regional mobility, expand transportation mode choices, and advance economic vitality. The plan and tax are effective through June 2026.

The voter-approved half-cent sales tax applies to retail sales, contracting, utilities, restaurant and bars, rental of real property, and rental of personal property. Groceries and prescription drugs are not taxed. All residents and visitors pay the sales tax, and it was calculated that the current average monthly household cost is \$21.29, with the average household size being 2.41 persons.¹

Supplemental funding includes jurisdiction-collected impact fees, local jurisdiction transportation allocations, and regionally designated state and federal transportation funding. Federal and state dollars from gas taxes (which have remained flat since the early 1990s) and other transportation-related fees often have limitations on when and how the monies can be spent. However, the RTA's half-cent tax is a more flexible source of tax revenue that can be used to address regional transportation need priorities through extensive public input.

To date, nearly 1,000 individual projects and services have been delivered. Projects include new and widened roadway corridors (see Figure 2), highway interchanges, new and innovative intersections, signalized pedestrian crossings, bike lands and bike paths, bus pullouts, advanced signal technology, wildlife linkages, drainage improvements, and new landscaping and public art.

Residents, businesses, and visitors alike benefit from the RTA improvements due to reduced congestion, improved safety and mobility, increased travel options and efficiencies, and new economic development activity along project corridors throughout the region.

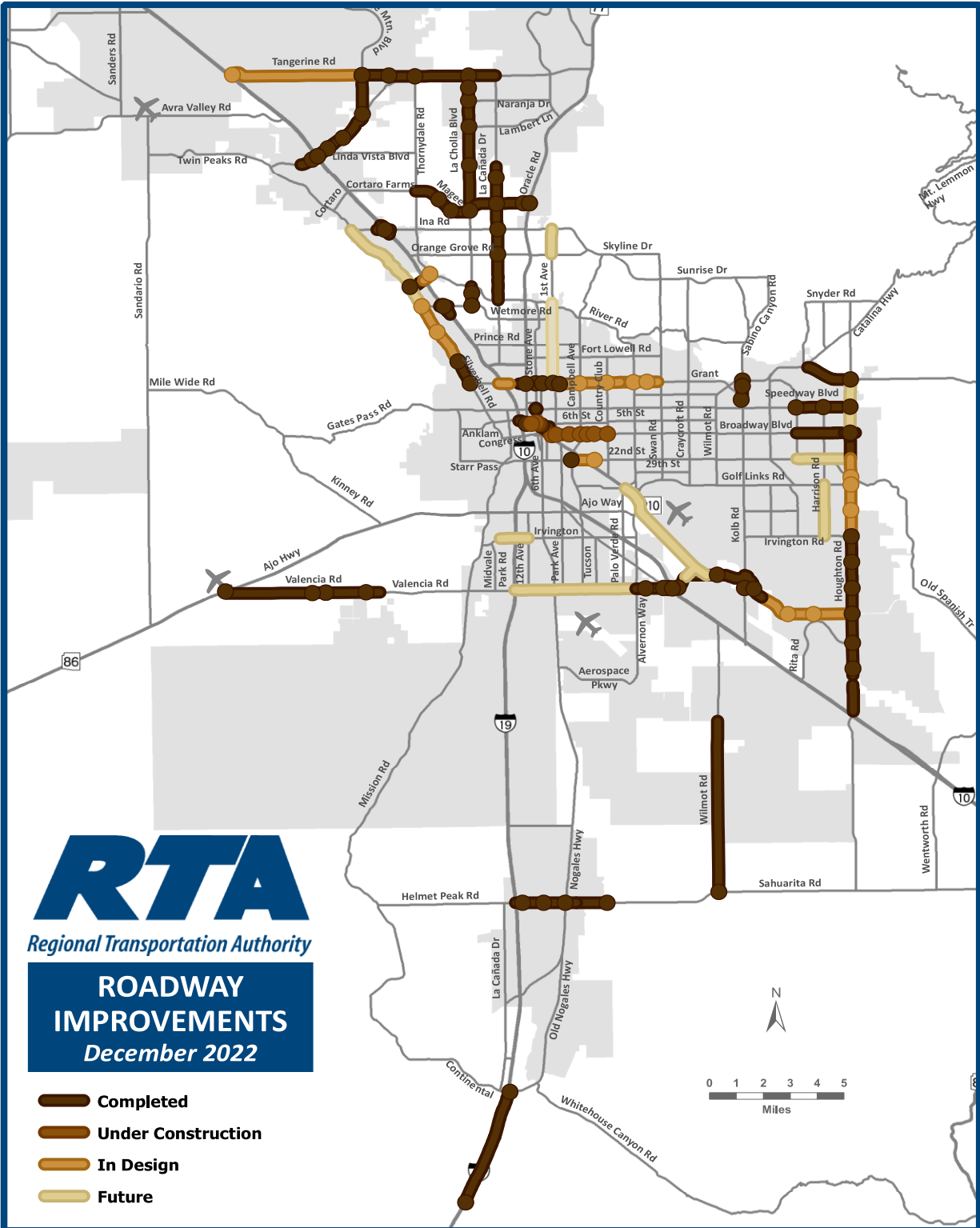
The PAG Regional Council and RTA Board are comprised of the chief elected members of the governing bodies from all local and county governments (i.e., the Cities of South Tucson and Tucson and the Towns of Marana, Oro Valley, and Sahuarita, and Pima County), and tribal nations (i.e., the Pascua Yaqui Tribe and Tohono O'odham Nation) and the Governor-appointed Pima County representative on the Arizona State Transportation Board.



¹ <https://rtanext.com>



Figure 2: RTA Completed Roadway Projects and Improvements Map

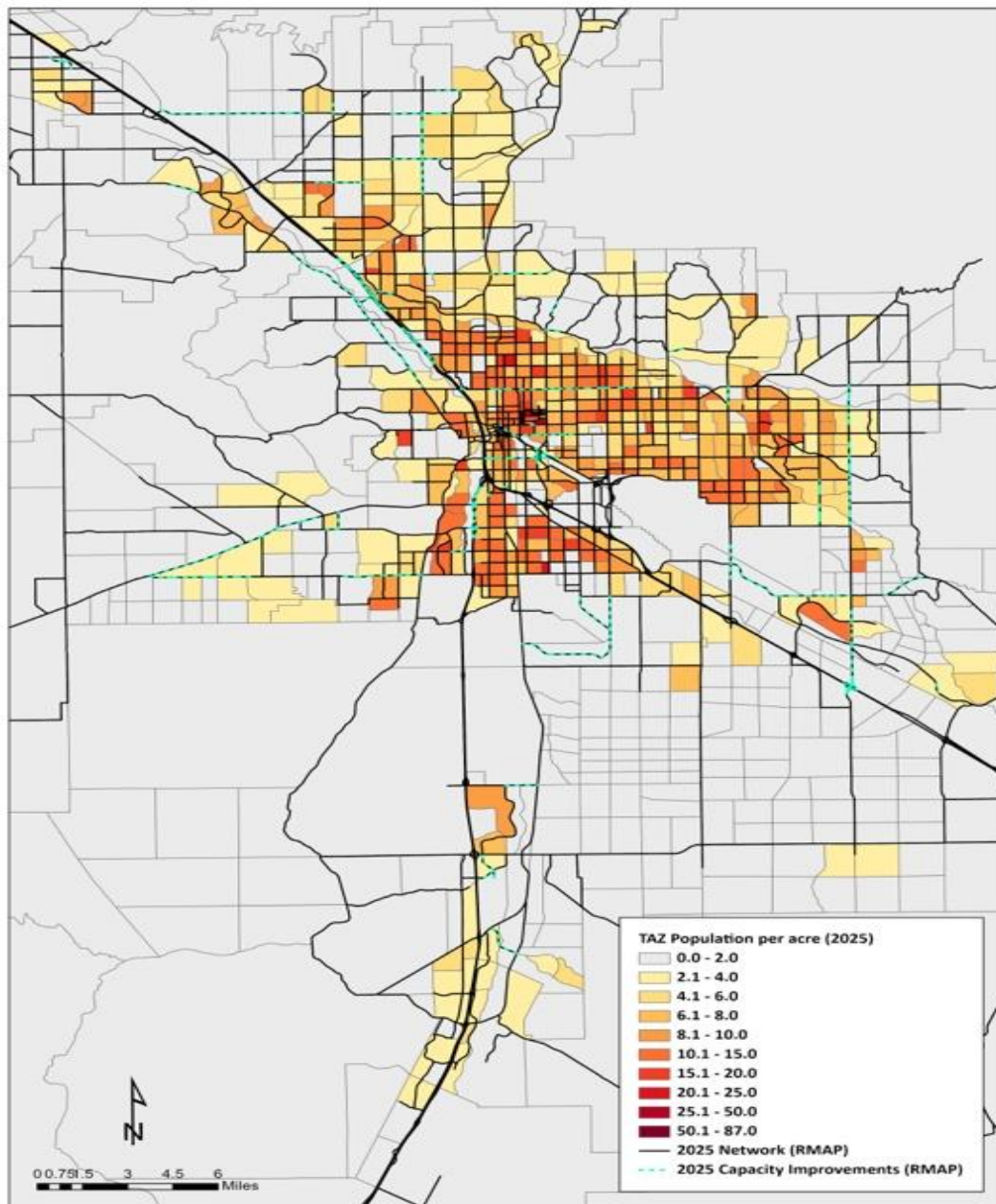




Regional Growth Patterns

A review of past population estimates was completed to identify the extent of roadway infrastructure investment match where people reside and work. In the following example, the population density is displayed for projections through 2025. The darker shades represent heightened population density while the lighter shades represent lower population counts per acre.

Figure 3: Population Density Projected Forecast (2025)²



² Source: Pima Association of Governments



An immediate observation is that the historical roadway planning and construction within the region balances well with the population growth in the region.

It is also important to note that transportation investment is a complex planning exercise because in some cases roadway improvements are needed to follow where people are locating, and in other cases the roadway investment determines where people will later reside.

Moving forward, careful planning must occur related to both population and employment growth opportunities. The region will have a better chance of maximizing its economic development and vitality potential if transportation investment was considered a core part of regional economic development planning. Additional analyses related to employment growth are included in the primary narrative.





Historical Economic Benefits

The modeling of future economic impacts associated with the proposed half-cent sales tax extension identified that approximately 54,000 jobs by 2045 in Pima County would be lost without the RTA tax extension.

If the same modeling assumptions were applied to the employment base over the previous two decades, the employment count in Pima County would be smaller by approximately 40,000 jobs. In other words, if the existing RTA plan and half-cent sales tax were not previously approved by voters, the region would have produced 40,000 fewer jobs over the previous two decades.

The 40,000 jobs that would not have been realized without the previous voter-approved sales tax for transportation investment is a conservative figure. This is because other regions throughout the state have been aggressive in their economic development efforts, including investing in transportation infrastructure, over the previous two decades and Pima County’s economy would have been weakened further due to the loss of tax revenues that have been invested in other job creation endeavors.

While it is difficult to estimate these additional losses with certainty, the 40,000 lost jobs estimate is likely understated by at least 50%. This means it is likely that the region would currently have approximately 60,000 fewer jobs if roadway investment was limited over the past two decades.

If the estimated job losses are modeled, the economic loss is equal to between \$55.7B and \$137.6B over the 20-year period (see Table 1). The fiscal loss (i.e., tax revenue loss) is equal to between \$2.8B and \$5.1B over the 20-year period.

Table 1: Cumulative 20-Year Economic and Fiscal Losses (\$ in Billions)		
	Impact of 40,000 Job Losses	Impact of 60,000 Job Losses
Jobs	(40,000)	(60,000)
Wages	(\$21.9)	(\$54.1)
Economic Output	(\$55.7)	(\$137.6)
Tax Revenues	(\$2.8)	(\$5.1)
State Taxes	(\$1.3)	(\$2.5)
County Taxes	(\$0.8)	(\$1.6)
City/Town Taxes	(\$0.6)	(\$1.0)

Source: Rounds Consulting Group, Inc.

Every industry in the regional economy would be impacted (see Table 2). The following table summarizes the job losses by type.



Table 2: 20-Year Job Losses by Industry

Industry	Jobs	Jobs
Agriculture, forestry, fishing and hunting	(731)	(1,096)
Mining, quarrying, and oil and gas extraction	(365)	(548)
Utilities	(133)	(199)
Construction	(1,464)	(2,196)
Manufacturing	(4,325)	(6,488)
Wholesale trade	(119)	(178)
Retail trade	(5,935)	(8,903)
Transportation and warehousing	(1,873)	(2,810)
Information	(1,078)	(1,616)
Finance and insurance	(1,980)	(2,970)
Real estate and rental and leasing	(632)	(947)
Professional, scientific, and technical services	(1,750)	(2,625)
Management of companies and enterprises	(142)	(213)
Administrative and support and waste management and remediation services	(2,747)	(4,120)
Educational services	(889)	(1,333)
Health care and social assistance	(5,672)	(8,507)
Arts, entertainment, and recreation	(1,303)	(1,954)
Accommodation and food services	(2,941)	(4,411)
Other services	(2,287)	(3,431)
Public administration	(3,636)	(5,455)
Job Loss Total	(40,000)	(60,000)

Source: Rounds Consulting Group, Inc.





RTA Next Economic Considerations

Limited transportation investments can have several economic implications. Transportation infrastructure is crucial for the efficient movement of goods and people. Limited investments can lead to congestion, delays, and increased transportation costs restricting economic growth.

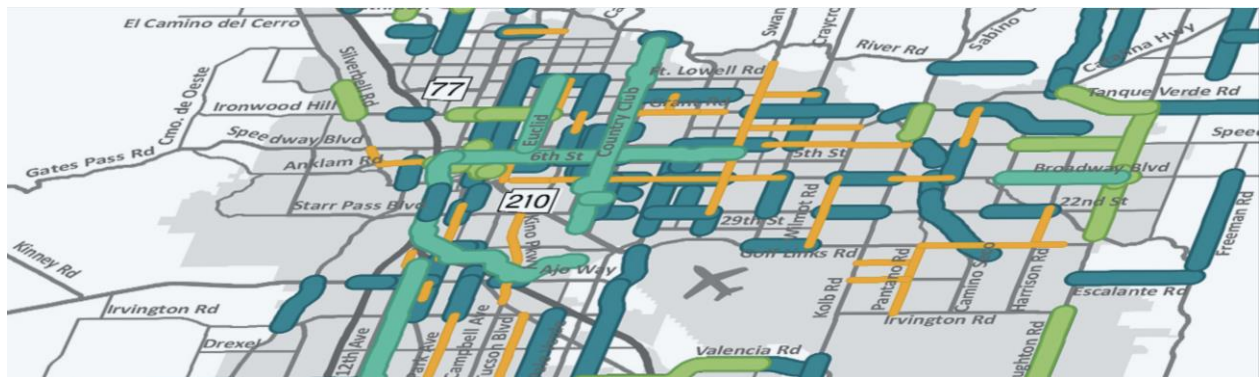
For example, inadequate infrastructure can lead to accessibility issues and productivity losses as businesses may find it hard to access markets and spend more time and resources on transportation. This, in turn, can lead to higher costs for consumers.

Over time, a deteriorating transportation infrastructure network can contribute to economic stagnation or decline as businesses and individuals may choose to relocate to areas with better transportation offers. This can have a ripple effect on the local economy and potentially lead to significant job losses.

On the other hand, properly planned and adequately funded transportation infrastructure projects can have a significant positive impact on the economy. Quality infrastructure improves productivity and helps attract new businesses and residents. The injection of new money into the economy creates a multiplier effect, providing employment opportunities for a wide range of workers.

The cumulative mathematical difference between the various economic development scenarios represents the costs versus benefits of the RTA Next proposal. For example, the forecast for employment growth under the baseline scenario can be compared to the pessimistic forecasted employment series to yield the net economic losses under the assumption that the current investment in Pima County transportation infrastructure significantly slows without an RTA tax extension. The “area between the curves” highlights the cumulative expected job losses and accompanying tax revenue losses in the region between 2025 and 2045.

However, the difference between the baseline and optimistic forecast scenarios highlights the economic potential or gains that can be attained. Thus, the area between the curves highlights the cumulative expected job gains and accompanying tax revenue gains in the region between 2025 and 2045. The potential for economic gains versus losses is best portrayed in graphical format.





Current Employment Projections

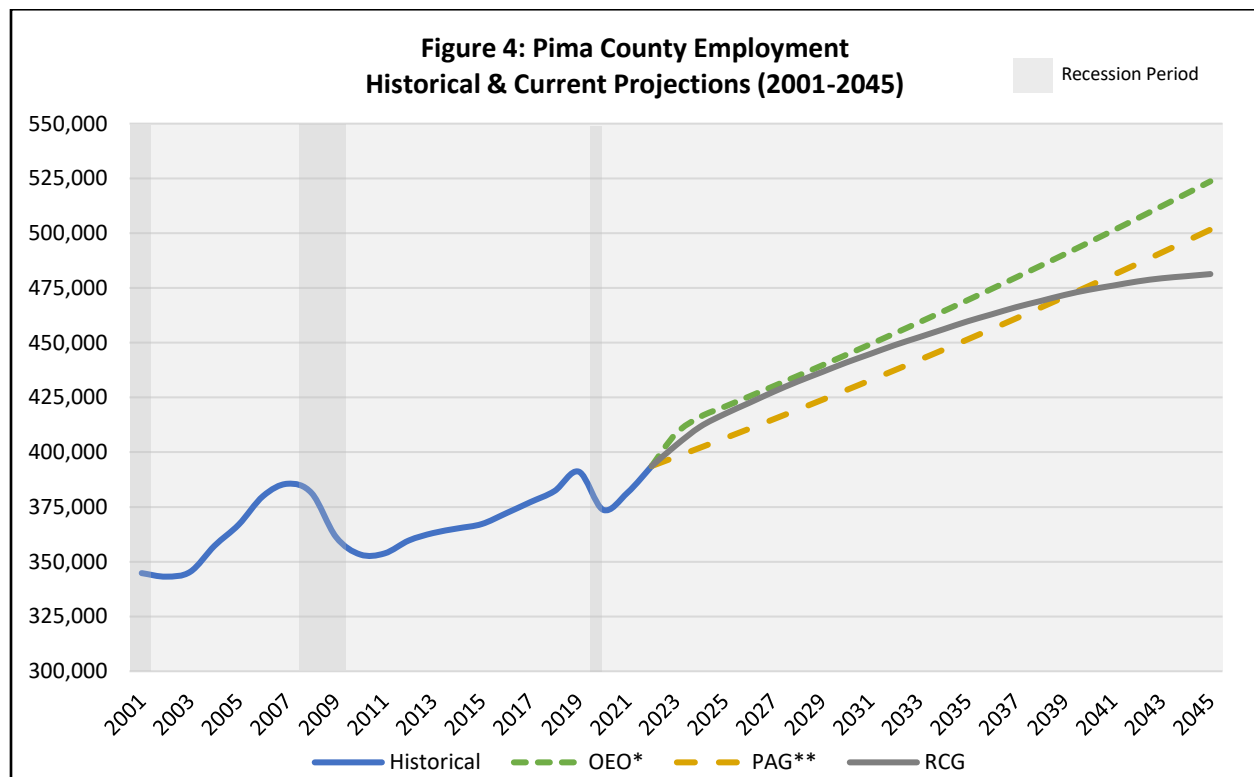
Figure 4 displays multiple employment forecasts for Pima County through 2045. The three primary forecasts were derived by the Arizona Office of Economic Opportunity (“OEO”), PAG, and RCG.

The OEO baseline forecast is the most optimistic of the three projections, followed by the PAG and RCG forecasts. For some context, the difference in job count by 2045, when comparing the more optimistic OEO forecast to PAG estimates is 22,100 jobs.

While the job count discrepancy between the forecasts appears to be large, there is value in producing a conservative forecast when investing considerable amounts of money into a region’s transportation system.

If the long-term forecast proves to be too optimistic and the planned expenditures exceed tax receipts, economic harm results. This is why the PAG and RCG forecasts utilize a higher required level of confidence which, by default, produces a more conservative forecast.

For this analysis, the RCG forecast was used as the baseline projection. Under this baseline scenario, Pima County is projected to add approximately 87,600 new jobs by 2045 based on current conditions and trends. The next step is to take one of the baseline forecasts and process scenarios where the forecasted values might grow at a faster rate or might decay under scenarios of disinvestment in the local economy.



* OEO Long-Term Projections (2021-2031) adjusted to match Short-Term Projections (2022-2024) and extended to 2045.

** PAG projections (2019-2045) re-benched and adjusted to correlate with the latest available data.

Source: Arizona Office of Economic Opportunity, Pima Association of Governments, Rounds Consulting Group, Inc.

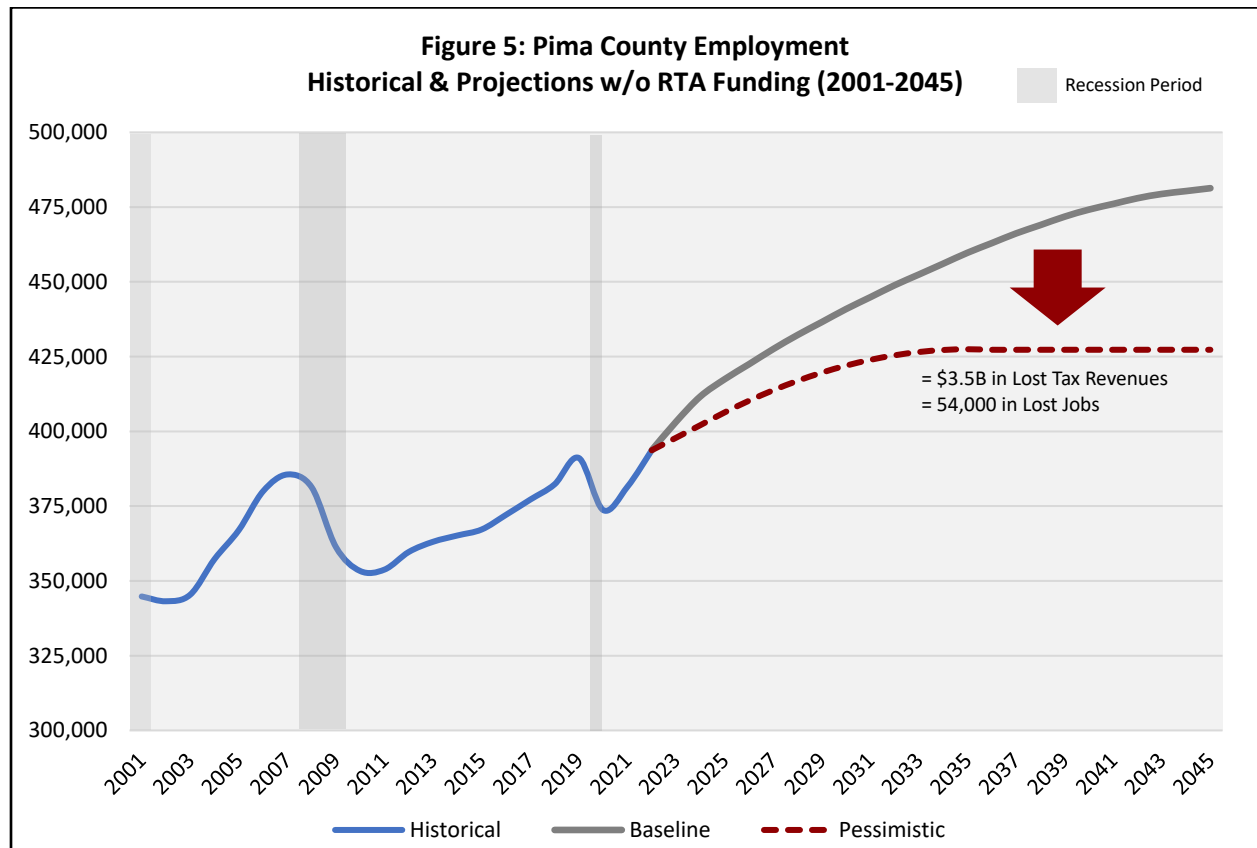


Pessimistic Scenario: The RTA Plan and Half-Cent Sales Tax Expire

Figure 5 displays the baseline RCG employment forecast alongside a pessimistic scenario where the regional transportation tax is not extended through 2045. The pessimistic forecast is expected to decay at a slow rate initially, then have more pronounced rates of decay later in the forecast period. This results in a convex forecast curve.

A reduction in regional transportation infrastructure investment could reduce the baseline projected new job gains (i.e., 87,600) by an estimated 54,000 jobs. In other words, the economic damage from a deteriorating transportation infrastructure system is equal to 54,000 lost jobs by 2045 and a loss of \$3.5B in cumulative tax revenues (i.e., state, county, and city/town taxes).

The economic losses related to the region by not being able to continue to invest in transportation infrastructure at reasonable levels is measured by the gap between the baseline forecast and the pessimistic forecast.



*Based on RCG baseline and pessimistic projections (2022-2045).
Source: Rounds Consulting Group, Inc.



The economic damage from a reduction in regional transportation infrastructure investment totals 54,000 lost jobs by 2045 compared to the baseline growth scenario, and a loss of \$3.5 billion in cumulative tax revenues (state, county, and city/town taxes) over the two-decade-plus period.

Optimistic Scenario: The RTA Plan and Half-Cent Sales Tax is Extended

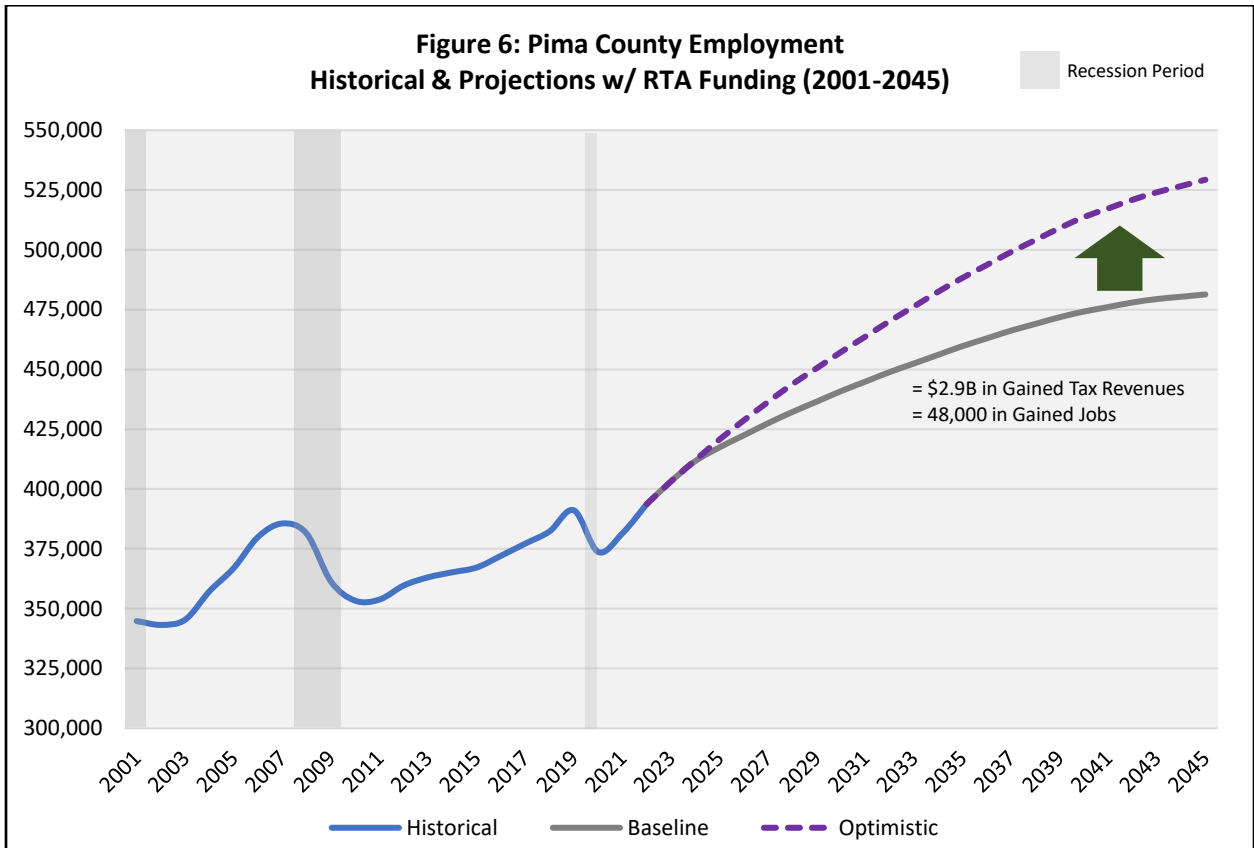
Figure 6 displays the area between the RCG baseline forecast and what is considered a more optimistic forecast scenario. The more aggressive forecast scenario is based on the potential of the County, City of Tucson, University of Arizona, and other government and private sector leaders to vigorously blending the transportation planning exercises with broader economic development efforts.

The RTA Next plan will allow for additional investments in transportation infrastructure and can be enhanced by matching transportation infrastructure investment with regional economic development planning as well as utilizing various “value capture” techniques. This yields an increase in economic activity over the same 20-year timeframe equal to 48,000 additional jobs and \$2.9 cumulative state and local tax revenues above the baseline projection.

The added revenue can then be reinvested into other transportation and related economic development projects to continue to further the economic growth of the region.

For prospective context, the net-new job tally in 2045, when comparing the baseline forecast with the optimistic scenario of enhanced economic development planning, totals 48,000 jobs.

The additional state and local tax revenue that will be generated reaches \$2.9 billion on a cumulative basis.



*Based on RCG baseline and optimistic projections (2022-2045).
Source: Rounds Consulting Group, Inc.

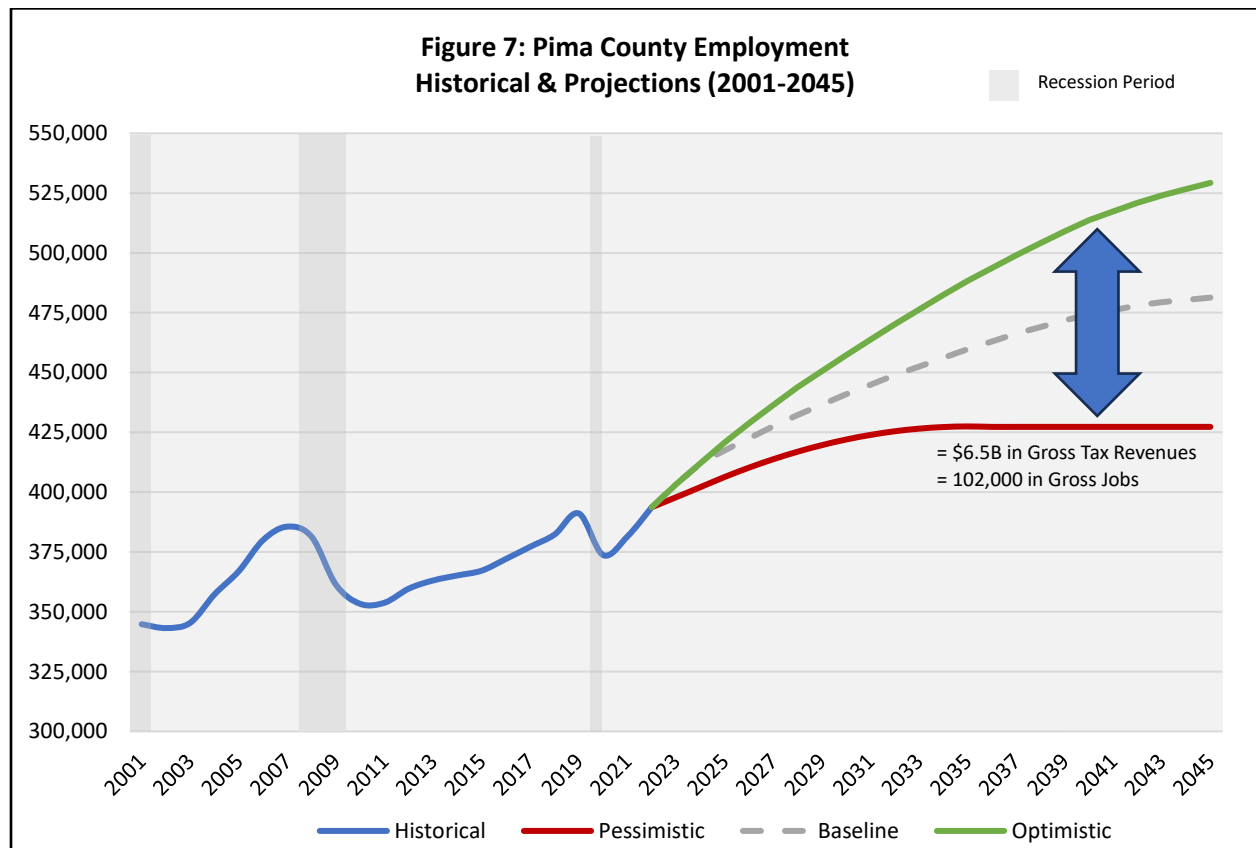




RTA Plan and Half-Cent Sales Tax Expiration vs. RTA Next Extension

Comparing the economic impact of the pessimistic scenario with the optimistic scenario provides perspective on the potential outcomes of continued investments (with proper queuing and timelines) vs. reductions in infrastructure investments.

The net difference in the number of new jobs that are projected to be created under the optimistic and pessimistic scenarios is equal to a net increase of 102,000 jobs (see Figure 7). The additional state and local tax revenue that would be generated under the optimistic scenario reaches \$6.5B on a cumulative basis.



Source: Rounds Consulting Group, Inc.



Lower Costs and Higher ROI

To realize the more optimistic forecast scenario, the queuing of the transportation projects must be largely based on economic development needs and proper construction timing. Additionally, “value capture” techniques, such as public/private partnerships, must be incorporated into the planning process.

Several value capture opportunities to maximize the volume of transportation infrastructure lane miles for the lowest cost possible exist. If utilized efficiently, the cost of a project can be reduced and additional projects can be funded with the financial savings.

A final goal is to identify what tools will yield a positive return on investment. The higher the return on investment, the higher the project should be in the queue. The Federal Highway Administration has identified a total of twelve value capture techniques broken up into six categories:³

- **Developer Contributions** – Techniques that obtain funds from private developers to generate revenue for an infrastructure project. Impact fees and negotiated exactions are included under this category.
- **Transportation Utility Fees (“TUF”)** – TUFs are “use fees” that generate revenue by regularly levying fees on the property owners that are estimated to use the new transportation facility the most.
- **Special Taxes and Fees** – Techniques that generate revenues through the imposition of taxes or fees whose revenues are used exclusively for transportation projects.
- **Tax Increment Financing (“TIF”)** – A financing mechanism that captures the incremental growth of property tax revenues within a specific area or district.
- **Joint Developments** – Techniques where government works collaboratively with the private sector to improve the use of land above or near an infrastructure development.
- **Naming Rights** – Involves an entity selling the rights to name infrastructure to a private company in exchange for financial support.

The use of one or more value capture techniques can have a profound impact on the number of lane miles that can be constructed over the 20-year forecast period and is the foundation for the optimistic forecast previously presented.

Return-on-Investment Considerations

The overall economic and fiscal impact gains from raising the growth forecast from that of pessimism to optimism equates to a gain of 102,000 jobs by 2045 and \$6.5B in cumulative tax revenues (state, county, and city/town). Over a 35-year period, the tax revenue impact increases to \$11.9B in state and local tax revenues. Pima County would collect about \$3.7B of the total \$11.9B in tax revenues.

³ Value Capture: Capitalizing on the Value Created by Transportation.



When evaluating the ROI from transportation infrastructure investment, an appropriate timeline is 25 to 35 years. This covers the estimated cycle of construction shifting to maintenance and repair. The ROI calculation is simply a comparison of the tax receipts from the enhanced economic development activity compared to the cost of the planned infrastructure.

RTA documents have identified that the adopted forecasted revenues from the half-cent sales tax extension will generate \$2.3B over 20 years. RCG estimates that the fiscal impact, or the tax revenues that will be collected by Pima County, associated with the economic gains will be \$3.7B over 35 years.

Thus, utilizing the total 35-year economic benefit of \$3.7B and the total cost to the taxpayer of \$2.3B, the ROI of the transportation infrastructure proposal is 1.6:1.

For an alternative calculation, the breakeven ROI ratio should, at a minimum, equal or exceed 1:1 within the 25-to-35-year period. This breakeven ratio is achieved by the 26th year. In other words, the investment breaks even (i.e., when benefits equal costs) after 26 years. This is on the lower end of the recommended 25-to-35-year economic benefit period.

The economic benefits associated with the transportation investment will exceed 1:1 even under the most conservative analysis. This means that taxpayers will receive more revenue from the economic gains than they will pay in the half-cent sales tax proposal.





Economic Conclusions and Future Actions

Transportation infrastructure is a bedrock of economic development across the country and in Arizona, and support for continuing investment equates to support for a stronger economy. Furthermore, the significant increase in job counts under the proposed transportation investment scenario means that Pima County residents will enjoy more employment opportunities with higher wages.

Utilizing a conservative economic forecast, the fiscal benefits to the taxpayer will exceed the cost to the taxpayer from the half-cent sales tax by a ratio of 1.6:1.

The taxpayer will benefit from increases in services, lower taxes, or both.

Regional employees will be able to utilize multiple modes of transportation to arrive at their place of employment in less time due to reductions in congestion, and with the added benefit of breathing cleaner air due to lower vehicle emissions.

Additional Considerations & Analyses

One of the most important considerations related to the RTA Next proposal involves the proper queuing and timing of the various transportation projects that are being considered in the 20-year plan. If high ROI projects are advanced in the 20-year queue, there will be an opportunity to earn what are considered “compound economic development” benefits.

These benefits arise when new jobs are created, and the ongoing employment produces additional tax revenues for a longer period of time. This creates additional revenues that can be reinvested in a community, including investment in even more roadway projects. It is highly recommended to implement high ROI projects such as significant regional corridors in the first period of the new 20-year plan.

Additional “To Do” Items to Maximize the Economic Benefits

To achieve a portion or all of the projections contained in the “optimistic” forecast scenario, transportation planners will need to optimize the development plan with strong considerations for maximizing the region’s economic development potential.

Proper project queuing will have the greatest impact on the economic projections. High ROI projects, if developed earlier over the next two decades, will have extra time to produce extra tax revenues that can be used on other projects. If the high-revenue yielding projects are delayed, the enhanced revenues will



be similarly delayed. ***Local leaders and planners should consider applying economic impact analyses to the larger scale projects to maximize this revenue-producing opportunity.***

Stakeholders should also spend sufficient time during the project planning phases to identify how the aforementioned “value capture” tools could positively impact the ability to fund projects at lower costs or build more infrastructure in a more aggressive timeframe.

The RTA will also need to become more integrated into the state and County’s economic development infrastructure, integrating transportation data with other economic data to help maximize the economic potential of Pima County.





About Rounds Consulting Group

Rounds Consulting Group advises both public and private sector entities on matters of economics and policy development. The firm specializes in economic development and tax policy analysis; education research; healthcare economics; transportation economics; fiscal planning including revenue forecasting and budget development; strategic planning and marketing; environmental economics; impact and market studies; tourism analysis; and litigation support.

The knowledge and skills of RCG's personnel have helped policymakers, businesses, advocacy groups, non-profits, government organizations, and other entities make informed decisions related to economic development, public policy, finance, real estate, community planning, market trends, and other related areas.



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Appendix – Data Detail

Table 3: Pima County Employment Projections (2023 - 2045)			
Year	Pessimistic	Baseline	Optimistic
2023	397,868	403,208	403,208
2024	402,081	411,675	412,078
2025	406,338	417,439	420,732
2026	410,234	422,448	428,726
2027	413,757	427,517	436,443
2028	416,896	432,220	443,862
2029	419,643	436,542	450,520
2030	421,987	440,907	457,278
2031	423,923	444,876	463,680
2032	425,444	448,880	470,172
2033	426,545	452,471	476,284
2034	427,222	456,090	482,476
2035	427,473	459,739	488,265
2036	427,297	462,957	493,636
2037	427,297	466,198	499,066
2038	427,297	468,995	504,057
2039	427,297	471,809	509,097
2040	427,297	474,168	513,679
2041	427,297	476,065	517,275
2042	427,297	477,969	520,896
2043	427,297	479,403	524,021
2044	427,297	480,362	526,641
2045	427,297	481,322	529,275

Source: Rounds Consulting Group, Inc.



Table 4: Cumulative Economic Losses of Pessimistic Scenario (\$ in Billions)		
	20-Year Impact	35-Year Impact
Jobs	(54,000)	(54,000)
Wages	(\$28.1)	(\$68.5)
Economic Output	(\$71.6)	(\$174.2)
Tax Revenues	(\$3.5)	(\$6.4)
State Taxes	(\$1.7)	(\$3.1)
County Taxes	(\$1.1)	(\$2.0)
City/Town Taxes	(\$0.7)	(\$1.3)

Source: Rounds Consulting Group, Inc.

Table 5: 20- and 35-Year Job Losses by Industry – Pessimistic Scenario		
Industry	Jobs	Jobs
Agriculture, forestry, fishing and hunting	(986)	(986)
Mining, quarrying, and oil and gas extraction	(493)	(493)
Utilities	(179)	(179)
Construction	(1,976)	(1,976)
Manufacturing	(5,839)	(5,839)
Wholesale trade	(160)	(160)
Retail trade	(8,013)	(8,013)
Transportation and warehousing	(2,529)	(2,529)
Information	(1,455)	(1,455)
Finance and insurance	(2,673)	(2,673)
Real estate and rental and leasing	(853)	(853)
Professional, scientific, and technical services	(2,362)	(2,362)
Management of companies and enterprises	(192)	(192)
Administrative and support and waste management and remediation services	(3,708)	(3,708)
Educational services	(1,200)	(1,200)
Health care and social assistance	(7,657)	(7,657)
Arts, entertainment, and recreation	(1,759)	(1,759)
Accommodation and food services	(3,970)	(3,970)
Other services	(3,088)	(3,088)
Public administration	(4,909)	(4,909)
Job Loss Total	(54,000)	(54,000)

Source: Rounds Consulting Group, Inc.



Table 6: Cumulative Economic Gains of Optimistic Scenario (\$ in Billions)

	20-Year Impact	35-Year Impact
Jobs	48,000	76,300
Wages	\$27.3	\$56.4
Economic Output	\$69.5	\$134.6
Tax Revenues	\$2.9	\$5.5
State Taxes	\$1.4	\$2.6
County Taxes	\$0.9	\$1.7
City/Town Taxes	\$0.6	\$1.1

Source: Rounds Consulting Group, Inc.

Table 7: 20- and 35-Year Job Impact by Industry – Optimistic Scenario

Industry	Jobs	Jobs
Agriculture, forestry, fishing and hunting	877	1,397
Mining, quarrying, and oil and gas extraction	438	698
Utilities	159	254
Construction	1,757	2,800
Manufacturing	5,191	8,272
Wholesale trade	142	227
Retail trade	7,122	11,351
Transportation and warehousing	2,248	3,583
Information	1,293	2,061
Finance and insurance	2,376	3,786
Real estate and rental and leasing	758	1,208
Professional, scientific, and technical services	2,100	3,347
Management of companies and enterprises	171	272
Administrative and support and waste management and remediation services	3,296	5,253
Educational services	1,066	1,699
Health care and social assistance	6,806	10,847
Arts, entertainment, and recreation	1,563	2,492
Accommodation and food services	3,529	5,624
Other services	2,745	4,374
Public administration	4,364	6,955
Total Jobs Gained	48,000	76,500

Source: Rounds Consulting Group, Inc.



Table 8: Cumulative Economic Impact of Pessimistic vs. Optimistic (\$ in Billions)		
	20-Year Impact	35-Year Impact
Jobs	102,000	130,300
Wages	\$55.4	\$124.9
Economic Output	\$141.1	\$308.8
Tax Revenues	\$6.4	\$11.9
State Taxes	\$3.1	\$5.7
County Taxes	\$2.0	\$3.7
City/Town Taxes	\$1.3	\$2.4

Source: Rounds Consulting Group, Inc.

Table 9: 20- and 35-Year Job Impact by Industry – Pessimistic vs. Optimistic Scenarios		
Industry	Jobs	Jobs
Agriculture, forestry, fishing and hunting	1,863	2,380
Mining, quarrying, and oil and gas extraction	931	1,189
Utilities	338	432
Construction	3,733	4,768
Manufacturing	11,030	14,090
Wholesale trade	302	386
Retail trade	15,135	19,334
Transportation and warehousing	4,777	6,102
Information	2,748	3,510
Finance and insurance	5,048	6,449
Real estate and rental and leasing	1,611	2,057
Professional, scientific, and technical services	4,462	5,700
Management of companies and enterprises	363	463
Administrative and support and waste management and remediation services	7,004	8,947
Educational services	2,266	2,894
Health care and social assistance	14,463	18,475
Arts, entertainment, and recreation	3,322	4,244
Accommodation and food services	7,499	9,579
Other services	5,833	7,451
Public administration	9,273	11,846
Total Jobs Gained	102,000	130,300

Source: Rounds Consulting Group, Inc.